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			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,420

Applicant(s)

POLANYI ET AL

Examiner

Angela A. Armstrong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/28/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komissarchik et al (US Patent No. 5,799,276) in view of Fiedorowicz et al (US Patent No. 6,544,039).

Regarding claims 1-3, Komissarchik et al, with the invention for knowledge-based speech recognition system and methods having frame length computed based upon estimated pitch period of vocalic intervals, read on every feature of the claim for dynamic personalized reading instruction where words meeting a confidence/recognition level are displayed above a "line" and words failing to meet the level are displayed "below", as follows:

Komissarchik et al read on the step of determining a first *word recognition level* (column 16 lines 13-17);

Komissarchik et al read on the step of *displaying words based on the determined word recognition level from a set of words classified by word recognition levels* (20 in figure 2);

Komissarchik et al read on the step of *determining word recognition errors based on comprehension of a word* (below the *confidence level* - see column 16 lines 18-22);

Komissarchik et al read on the step of determining a second *word recognition level based on the determined word recognition errors* (with the ranking illustrated in 23, figure 2 - see column 15 lines 41-44 as taught in column 4 line 42).

Komissarchik does not teach using at least one comprehension aid provided to the user. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Komissarchik to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

Regarding claims 14-16, Komissarchik et al read on every feature of the claim for *dynamic personalized reading instruction* as follows:

- Komissarchik et al read on the feature of *a controller* (in the CPU 14 in figure 1);
- Komissarchik et al read on the feature of *a memory* (17 in figure 1) *for storing words and comprehension aids classified by word recognition levels* (inherently relevant to the word confidence levels of column 8 lines 16-17 - see column 16 lines 18-22);
- Komissarchik et al read on the feature of *a word recognition level determining circuit* for *determining a word recognition level* (column 16 lines 13-17);
- Komissarchik et al read on the feature of *a word display circuit for displaying words* (20 in figure 2) *from the stored words based on the determined word recognition level*;
- Komissarchik et al read on the feature of *a recognition error determining circuit* for *determining recognition errors* (column 16 lines 18-22);

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- Komissarchik et al read on the feature of *a comprehension aid display circuit for displaying comprehension aids based on determined recognition errors* (22 figure 2);
- Komissarchik et al read on the feature of *a word recognition level adjusting circuit adjusting the word recognition level based on the determined recognition errors* (inherently enabling the ranking illustrated in 23, figure 2 - see column 15 lines 41-44 as taught in column 4 line 42).

Komissarchik does not teach using at least one comprehension aid provided to the user. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Komissarchik to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rtischev et al (US Patent No. 5,634,086) in view of Fiedorowicz et al (US Patent No. 6,544,039).

Regarding claims 28 and 30, Rtischev et al, with the invention for *voice interactive language instruction*, read on the features of *a carrier wave encoded to transmit a control*

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program (an inherent characteristic of the DSP device, column 3 line 66) usable for dynamic personalized reading instruction to a device for executing the control program (disclosed in column 4 lines 48-58) including instructions and, specific to claim 30, a computer readable program code embodied on the computer readable storage medium (34 in figure 1 & 42-48 in figure 2 - see column 4 line 63 to column 5 line 2) to perform dynamic personalized reading instruction as follows: - Rtischev et al read on the feature of instructions for determining a 1st word recognition level (AJ in figure 4B). - Rtischev et al read on the feature of instructions for displaying words (video, column 3 line 5) based on the determined word recognition level (column 3 lines 60-65) from a set of words classified by word recognition levels. - Rtischev et al read on the feature of instructions for determining word recognition errors based on comprehension of a word (by recognizing reading errors in column 3 line 43) and instructions for determining a 2nd word recognition level based on the determined word recognition errors (i.e., any other one of the three levels of error tolerance column 3 line 39).

Rtischev does not teach using at least one comprehension aid provided to the user. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Rtischev to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

Claims 4-5 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komissarchik et al in view of Fiedorowicz et al and further in view of Carlgren et al (U.S. Patent 4,456,973 A).

Regarding claims 4-5 and 17-18; the claims are set forth with the same limitations as claims 3 and 16, respectively. Komissarchik et al does not speak to *comprehension aids*. Carlgren et al read on the feature where the *comprehension aid* is a *human sensible explanation of the concept of* at least one classified word (in this case, by providing *synonyms* in column 5 lines 45-49).

Regarding claims 5 and 18 as understood by the Examiner; the claims are set forth with the same limitations as claims 4 and 17, respectively. Komissarchik et al does not speak to *comprehension aids*. Carlgren et al read on the feature where the *human sensible explanation of the concept* is at least one of a graphic icon, an *animation*, *audio* information, and video information (43 & 44 in figure 5).

Claims 6-12 and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burstein et al (U.S. Patent 6,366,759 B1) in view of Carlgren et al and further in view of Fiedorowicz.

Regarding claims 6 and 19 as understood by the Examiner, Burstein et al, with the invention for *computer-based automatic essay scoring*, read on the features of *dynamic personalized reading instruction* as follows: - Burstein et al read on the step of determining a text (essay, in

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column 7 lines 1-3); - Burstein et al teach the step of analyzing the text *based on* a theory of discourse analysis (column 1 lines 59-64); - Burstein et al read on the step of determining a *user reading* level (i.e., class in column 7 lines 7-9);

- Burstein et al teach on the step of *displaying a grammatical tunable text summary* (using *grammar checker variables* column 2 lines 20-28) *based on the determined reading level* (i.e., *essay scoring* in column 2 lines 38-43);

Burstein does not teach using at least one comprehension aid provided to the user.

Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Burstein to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

- Burstein et al recognize the role of determining comprehension (column 1 lines 59-66), but do not explicitly teach its use as do Carlgren et al, who read on the step of *determining comprehension of the text* (column 5 lines 39-44); and
- Carlgren et al further read on the step of *determining a further user reading levels based on the comprehension and reading level* (with the step of applying synonyms *whose grade level is exceeded*, column 5 lines 60-63).

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- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Carlgren et al to the device/method of Burstein et al so as to keep suggestions compatible with the associated materials.
- Regarding those features particular to claim 19, Burstein et al disclose the physical features of *a memory* and circuits enabling *input/output* and the features cited above (claim 17 lines 32-42)

Regarding claims 7 and 20, the claims are set forth with the same limitations as claims 6 and 19, respectively. Burstein et al do not speak to *displaying salient information*. Carlgren et al read on the step of *displaying salient information from the grammatical tunable text summary based on at least one of:- a user request (42 in figure 5), determined reading speed, and determined comprehension level*. It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Carlgren et al to the device/method of Burstein et al so that suggestions agree with the criteria that was used to decide the need for further display.

Regarding claims 8 and 21; the claims are set forth with the same limitations as claims 7 and 19, respectively. Burstein et al teach the feature where the text is *analyzed based on the Discourse Structures Theory, Linguistic Discourse Model, Rhetorical Structure Theory* (column 1 line 57), *Systemic Functional Grammar*, or *Tagmemics*.

Claims 9-12 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burstein et al in view of Carlgren et al and Fiedorowicz et al and further in view of Komissarchik et al.

Regarding claim 9 as understood by the Examiner and claim 22, the claims are set forth with the same limitations as claims 7 and 19, respectively. The features of the claims are the same as those found in claim 2 and the claims are rejected for the same reasons.

Regarding claims 10 and 23, the claims are set forth with the same limitations as claims 9 and 22, respectively. The features of the claims are the same as those found in claim 6 and the claims are rejected for the same reasons.

Regarding claims 11 and 24, the claims are set forth with the same limitations as claims 10 and 23, respectively. The features of the claims are the same as those found in claim 4 and the claims are rejected for the same reasons.

Regarding claims 12 and 25 as understood by the Examiner, the claims are set forth with the same limitations as claims 11 and 24, respectively. The features of the claims are the same as those found in claim 5 and the claims are rejected for the same reasons.

Regarding claim 13, Komissarchik et al read on the features of the claim for *combined word and sentence level dynamic personalized reading instruction* as follows:

- Komissarchik et al read on the feature of *providing word level dynamic personalized instruction* (22 in figure 2):

Komissarchik et al read on the step of determining a 1st *word recognition* level (column 16 lines 13-17); Komissarchik et al read on the step of displaying *words based on* the determined

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word recognition level from a set of words classified by *word recognition* levels (20 in figure 2); Komissarchik et al read on the step of determining *word recognition error* based on *comprehension of a word* (below the *confidence level* - see column 16 lines 18-22); Komissarchik et al read on the features of *providing sentence level dynamic personalized instruction* (column 8 line 13) but does not speak to a second or further recognition level.

Komissarchik does not teach using at least one comprehension aid provided to the user. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Komissarchik to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

Carlgren et al read on the step of *determining* a 2nd word recognition level based on the determined *word recognition errors* (with the step of applying *synonyms whose grade level is exceeded*, column 5 lines 60-63). Burstein et al read on the step of determining a text (essay, in column 7 lines 1-3); Burstein et al teach the step of *analyzing* the text based on a theory of discourse *analysis* (column 1 lines 59-64); Burstein et al read on the step of determining a 1st user *reading level* (i.e., *class* in column 7 lines 7-9); Burstein et al teach the step of displaying a grammatical tunable text summary *based on the determined reading level* (using grammar checker variables, column 2 lines 20-28)

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- Burstein et al recognize the role of determining comprehension (column 1 lines 59-66), but do not explicitly teach its use as do Carlgren et al, who read on the step of *determining comprehension of the text* (column 5 lines 39-44); and
- Carlgren et al further read on the step of determining a 2nd *user reading level based on the comprehension and reading level* (with the step of applying *synonyms whose grade level is exceeded*, column 5 lines 60-63).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Carlgren et al to the device/method of Komissarchik et al to keep the discourse of a text in line with the associated words, and it would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Burstein et al to the device/method of Komissarchik et al and Calgren et al to identify problems with understanding that do not arise from word misrecognition.

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlgren et al in view of Komissarchik et al and further in view of Fiedorowicz and further in view of Rtischev et al (U.S. Patent 5,634,086 A).

Regarding claim 26, Carlgren et al read on the features of the claim for *combined word and sentence level dynamic personalized reading instruction* as follows:

Carlgren et al further read on the feature of *word level dynamic personalized instruction* (column 3 line 41) and a controller (column 3 line 37); a memory for storing *words* (column 2 line 23), *comprehension aids* classified by *word recognition levels and a text* (column 1 lines 30-37);

Carlgren et al further read on the feature of a *word recognition level determining circuit for determining a. word recognition level* (column 1 lines 36-37) and a *word display circuit for displaying words from the stored words based on the determined word recognition level* (column 1 line 40); Carlgren et al does not, speak to *recognition errors*. Komissarchik et al read on the feature of a *recognition error determining circuit for determining recognition errors* (column 17 lines 2-5) and a *comprehension aid display circuit for displaying comprehension aids based on determined recognition errors* (20 in figure 2).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Komissarchik et al to the device/method of Calgren et al so as to decrease the error rate for frequent words.

Calgren does not teach using at least one comprehension aid provided to the user. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Calgren to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

Neither Carlgren et al nor Komissarchik et al mention adjusting *word recognition based on errors*. Rtischev et al, with the invention for voice-interactive *language instruction*, disclose the feature of a *word recognition level adjusting circuit adjusting the word recognition level*

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based on the determined recognition errors (AJ-->AN in figure 4B - see column 3 lines 38-40).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Rtischev et al to the device/method of Calgren or Komissarchik et al to keep the system from being annoying to use by employing a level of patience that simulates natural human-based interaction. Carlgren et al teach the feature of sentence level *dynamic personalized instruction* circuit (column 1 lines 19-24); *an input/output circuit for loading a selected text* into the memory (column 2 lines 23-24) but does not stipulate *discourse* analysis. Burstein et al teach the feature of a *discourse analysis* circuit for *analyzing the text* (column 1 lines 59-64) and on the feature of a grammatical *tunable text* summary *generating circuit* for *determining a grammatical tunable text summary of the analyzed text* (using grammar checker variables column 2 lines 20-28); Carlgren et al read on the feature of a *text determining circuit* for *determining display text based on a determined reading level information* (column 1 lines 36-37 & 40); Carlgren et al does not mention interactive questioning.

Rtischev et al disclose the feature of a *comprehension question generating circuit* for *generating comprehension questions* (column 3 lines 15-17 & 45-48) *based on the grammatical tunable text* summary (in this case, being expected to match the target language of column 3 line 18) and on the feature of a controller for *determining a new reading level* (i.e., one of the 4 levels or states in column 3 lines 46-48) *based on at least one of the determined comprehension and reading speed* (with the pauses T in figure 4A2 & AH-->AJ in figure 4B).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Rtischev et al to the

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device/method of Carlgren et al so as to monitor the dialogue to be within the parameters of the using audience.

Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlgren et al in view of Fiedorowicz et al and further in view of Burstein et al.

Regarding claims 29 and 31, Carlgren et al read on the features of the claims for *a carrier wave encoded to transmit a control program usable for dynamic personalized reading instruction to a device for executing the control program* (column 3 lines 28-35) and for *a computer readable storage medium, comprising a computer readable program code embodied on the computer readable storage medium, the computer readable program code usable to program a computer to perform dynamic personalized reading instruction* (column 2 lines 23-25) as follows:

- Carlgren et al read on the feature of *instructions for determining a text* (column 2 lines 30-31);
- Carlgren et al does not mention using a *theory of discourse analysis*. Burstein et al teach the feature of *analyzing the text based on a theory of discourse analysis* (column 1 lines 59-64);
- Carlgren et al disclose a target grade level but do not speak to *instructions for determining reading levels*. Fiedorowicz teaches a method of teaching reading in which students receive instruction in component skills and practice the use of the skills in comprehension exercises. Fiedorowicz teaches the comprehension exercises help students develop strategies for better comprehension and development of a reading vocabulary (col. 5, lines 58-67).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Calgren to provide for comprehension exercises to the user, as suggested by Fiedorowicz, for the purpose of improving the students comprehension abilities and reading vocabulary, as suggested by Fiedorowicz.

- Burstein et al teach the feature of instructions for *displaying a grammatical tunable text summary based on the determined reading level* (using *grammar checker variables*, column 2 lines 20-28).
- Burstein et al recognize the role of determining comprehension (column 1 lines 5966), but do not explicitly teach its use as do Carlgren et al, who read on the step of *instructions for determining comprehension of the text* (column 5 lines 39-44); and
- Carlgren et al further read on the step of *instructions for determining a further user reading levels based on the comprehension and reading level* (with the step of applying synonyms whose grade level is exceeded, column 5 lines 60-63).
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Burstein et al to the device/method of Carlgren et al to address mis-recognition based on word understanding rather than to rely on the mechanics of word matching and selection.

Response to Arguments

Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

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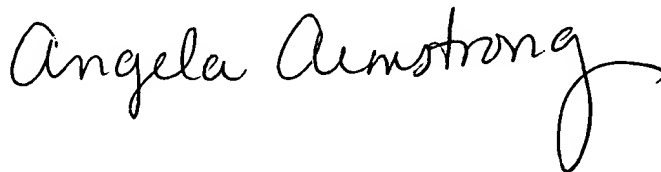
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Angela A. Armstrong
Examiner
Art Unit 2654

AAA
February 7, 2005

A handwritten signature in black ink that reads "Angela Armstrong". The signature is written in a cursive style with a large, flowing "A" and a long, sweeping underline.